



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,453	12/27/2001	Kevin M. Gaukel	A8179	1554

7590 12/12/2003

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3213

EXAMINER

TAKAOKA, DEAN O

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,453	GAUKEL ET AL.	
	Examiner	Art Unit	
	Dean O Takaoka	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19 is/are allowed.
- 6) ☒ Claim(s) 20 and 25 is/are rejected.
- 7) ☒ Claim(s) 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (4,902,991) in view of Ishikawa et al. (U.S. Patent No. 6,052,041) for reasons of record contained in the previous office action dated March 26, 2003.

Claim 20 has not been amended and remains unpatentable over Ishikawa et al. ('991) in view of Ishikawa et al. ('041).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (6,052,041) in view of Ishikawa et al. (U.S. Patent No. 4,902,991).

Ishikawa et al. ('041) shows a method of combining a plurality of signals using a combiner (e.g. dual mode duplexer) having a housing (shown in Fig. 10 and equivalent to 55 shown in Fig. 8) enclosing at least two cavity resonators (such as resonators shown as 62a-h – Fig. 10) in separate and adjacent cavities, the housing having a cable connector disposed on at least two apertures formed in a side wall of the housing (where the cable connectors such as the coax connector for input, output, and common or antenna is shown in Fig. 8 with respect to Fig. 10) where each of the cavity resonators has a corresponding aperture (where coupling line 69, shown in Fig. 10

extends into each resonator cavity through apertures in the housing wall and where coupling line 69 is equivalent to coupling line 49 of Fig. 7) and the connector connects to each of the resonators through the apertures via a conductor (coupling line 69), the method comprising: coupling signals carried on the conductor through the apertures and combining the signals into signal pairs using transmission lines. Ishikawa et al. is silent with respect to the transmission lines being well-known lengths of equal to or less than a quarter wave length.

Ishikawa et al. ('991) shows as similar resonator combiner using coupled lines (25) having a specific well-known length of one quarter wavelength or less (col. 3, lines 47-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the generic coupling line disclosed by Ishikawa et al. ('041) with the specific coupling line comprising one quarter wave length or less disclosed by Ishikawa et al. ('991). Such a modification would have realized the advantageous benefit of providing stable coupling thus proving an improved radio signal reception by reducing scattering loss (col. 1, line 60 to col. 2, line 13) thus suggesting the obviousness of the modification.

Response to Arguments

Applicant's arguments filed July 1, 2003 have been fully considered but they are not persuasive.

The Applicant argues that the combination of Ishikawa ('991) and ('041) would not have been obvious. The Applicant asserts that "*the quarter wave transmission lines*

disclosed in Ishikawa '991 (Ishikawa '991, column 3, lines 47-50) would be lost, because transmission lines of that length are only disclosed with the unique resonator shapes of Ishikawa '991 shown in Figure 1." to which the Examiner disagrees. The coupling line 25 of Ishikawa '991 is merely a coupling loop which is well-known in the art and which may take various shapes. Further the resonator as shown in Ishikawa '991 is a typical dielectric type resonator mounted on a pedestal, the dielectric resonator also well-known in the art and also may take a variety of shapes. While Ishikawa '991 does not explicitly show coupling signal pairs, this is obvious in that the TE and TM modes are discussed in both Ishikawa references. Ishikawa '041 further teaches the TM dual mode, hence signal pair and further shows several types of different coupling loops (e.g. transmission lines) such as 49 in Fig. 5b and 107a,d in Fig. 13. It would thus be obvious to combine the teachings of both references, further in that both prior art references are of the same inventor.

Allowable Subject Matter

Claims 1 – 19, and 24 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 1, 3, and 24:

Ishikawa shows a plurality of cavity edge pair of resonators and a plurality of apertures but does not show the edge pair of resonators operably connected to the common port through half wave transmission lines.

Claims 21 – 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

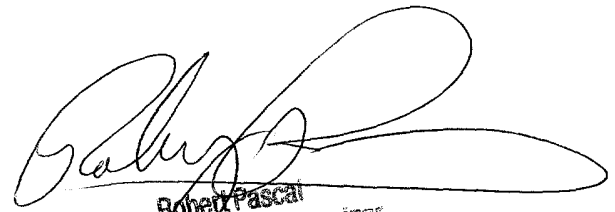
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 10/026,453
Art Unit: 2817

Page 6

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dot
December 8, 2003



Robert Pascal
Supervisory Patent Examiner
Technology Center 2817